WHAT IS CLAIMED IS :

1.    A method of increasing the ambiguity distance of an FSK radar, comprising the steps of:

sending out a waveform comprising patterns formed by at least four frequency plateaux, wherein the frequencies of the plateaux forming the patterns are alternately shifted by plus or minus a value $\Delta f'$ ($\pm \Delta f'$) relative to the frequencies of the plateaux of the preceding pattern.

2.   The method of claim 1, wherein one in every two patterns is a duration pattern T whose frequency varies from $f_0$ to $f_0 + n.\delta f$ in n plateaux.

3.   The method of claim 2, wherein the next pattern is one whose frequency varies from ($f_0 - \Delta f'$) to ($f_0 - \Delta f'$) + n.$\delta f$

4.   The method of claim 1, wherein the frequency shift $\Delta f$ is chosen to be large enough to induce a phase rotation, on the echo of a target located beyond the ambiguity distance.

5.   The method of claim 1, wherein the frequency shift is chosen to be low enough not to substantially modify the characteristics of detection of echoes coming from targets that are unambiguous in distance.

6.  The method of claim 5, wherein the echoes are not modified in level.

7.   The method of claim 1, wherein the ambiguity distance is doubled.

8.   The method of claim 4, wherein the frequency shift is chosen to be low enough not to substantially modify the characteristics of detection of echoes coming from targets that are unambiguous in distance.

9.    The method of claim 3, wherein the frequency shift $\Delta f$ is chosen to be large enough to induce a phase rotation, on the echo of a target located beyond the ambiguity distance.

10.    The method of claim 9, wherein the frequency shift is chosen to be low enough not to substantially modify the characteristics of detection of echoes coming from targets that are unambiguous in distance.

11.    The method of claim 1, wherein the plateaux is a step.